

Oxidation of Lignin for Production of Chemicals

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Abstract : Interest in renewable feedstock for the chemical industry has increased considerably over the last decades, mainly due to environmental concerns and foreseeable shortage of fossil raw materials. Lignocellulosic biomass is an abundant source of bio-based raw material that is readily available and can be utilized as an alternative source for chemical production. Lignin accrues in enormous amounts as a by-product of the pulping process in the pulp and paper industry. It is estimated that 70 million tons of lignin are annually processed worldwide from the pulp and paper industry alone. Despite its attractive chemical composition, lignin is still insufficiently exploited and mainly regarded as bio-waste. Therefore, an environmentally benign process that can completely and competitively convert lignin into different value-added chemicals is needed to launch its commercial success on industrial scale. Partial wet oxidation by molecular oxygen has received increased attention as a potential process for production of chemicals from biomass wastes. In this paper, the production of chemicals by oxidation of lignin is investigated. The factors influencing the different types of products formed during the oxidation of lignin and their yields and compositions are discussed.

Keywords : biomass, lignin, waste, chemicals

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